

IN THE CLAIMS:

Please AMEND the claims as follows:

1. (Currently Amended) A method of producing silicon single crystals which comprises employing:
in the step of:

pulling up a the silicon single crystal in the Czochralski method, with a cooling rate of not less than
7.3 °C/min in the single crystal temperature range of 1200-1050°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM
'79 value), and the single crystal is not nitrogen doped.

2. (Currently Amended) A method of producing silicon single crystals which comprises employing:
in the step of:

pulling up a the silicon single crystal in the Czochralski method, with a cooling rate of not less than
7.3 °C/min in the single crystal temperature range of 1200-1050°C; and then

cooling the single crystal at a cooling rate of not more than 3.5 °C/min in the single crystal
temperature range of 1000-700°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM
'79 value), and the single crystal is not nitrogen doped.

3. (Canceled)

4. (Currently Amended) A method of manufacturing epitaxial wafers which comprises allowing:
forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal produced by the Czochralski method ~~by employing with~~ a cooling rate of not less than 7.3 °C/min in the single crystal temperature range of 1200-1050°C ~~in the step of pulling up thereof,~~
wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value), and the single crystal is not nitrogen doped.

5. (Currently Amended) A method of manufacturing epitaxial wafers which comprises allowing:
forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal produced by the Czochralski method ~~by employing with~~ a cooling rate of not less than 7.3 °C/min in the single crystal temperature range of 1200-1050°C; and then
cooling the single crystal at a cooling rate of not more than 3.5 °C/min in the single crystal temperature range of 1000-700°C ~~in the step of pulling up thereof,~~
wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value), and the single crystal is not nitrogen doped.

6-7. (Canceled)

8. (Currently Amended) A method of producing silicon single crystals which comprises ~~employing~~
~~in the step of:~~

pulling up a silicon single crystal doped with 1×10^{12} atoms/cm³ to 1×10^{14} atoms/cm³ of nitrogen in the Czochralski method []:

cooling the silicon single crystal with a cooling rate of not more than 1.2°C/min in the single crystal temperature range of 1000-850°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value).

9. (Currently Amended) A method of producing silicon single crystals which comprises employing, in the step of:

pulling up a silicon single crystal doped with 1×10^{12} atoms/cm³ to 1×10^{14} atoms/cm³ of nitrogen in the Czochralski method, with a cooling rate of not less than 2.7°C/min in the single crystal temperature range of 1150-1020°C; and then

cooling the silicon single crystal at a cooling rate of not more than 1.2°C/min in the single crystal temperature range of 1000-850°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value).

10. (Currently Amended) A method of producing silicon single crystals which comprises employing, in the step of:

pulling up a silicon single crystal doped with 5×10^{13} atoms/cm³ to 1×10^{16} atoms/cm³ of nitrogen in the Czochralski method, with a cooling rate of not less than 6.5 °C/min in the single crystal temperature range of 1150-800 °C.

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value).

~~11.~~ (Currently Amended) A method of producing silicon single crystals as claimed in any of Claims ~~7 to 10~~ 8 to 10, wherein the single crystal has an oxygen concentration of not less than 4×10^{17} atoms/cm³ (ASTM '79).

~~12.~~ (Canceled)

~~(X)~~
13. (Currently Amended) A method of manufacturing epitaxial wafers which comprises allowing: forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal doped with 1×10^{12} atoms/cm³ to 1×10^{14} atoms/cm³ of nitrogen as produced by the Czochralski method by employing; and then

cooling the epitaxial layer with a cooling rate of not more than 1.2 °C/min in the single crystal temperature range of 1000-850 °C in the step of pulling up thereof,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value).

14. (Currently Amended) A method of manufacturing epitaxial wafers which comprises allowing:
forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal doped with 1×10^{12} atoms/cm³ to 1×10^{14} atoms/cm³ of nitrogen as produced by the Czochralski method by employing with a cooling rate of not less than 2.7 °C/min in the single crystal temperature range of 1150-1020 °C, and then

cooling the epitaxial layer at a cooling rate of not more than 1.2 °C/min in the single crystal temperature range of 1000-850 °C in the step of pulling up thereof,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value).

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15. (Currently Amended) A method of manufacturing epitaxial wafers which comprises allowing:
forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal doped with 5×10^{13} atoms/cm³ to 1×10^{16} atoms/cm³ as produced by the Czochralski method by employing with a cooling rate of not less than 6.5 °C/min in the crystal temperature range of 1150-800 °C in the step of pulling up thereof,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm³ (ASTM '79 value).

16. (Currently Amended) A method of manufacturing epitaxial wafers as claimed in any of Claims

~~12 to 15~~ 13 to 15, wherein the silicon wafer sliced out has an oxygen concentration of not less than 4×10^{17}

atoms/cm³ (ASTM '79).